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A new fossil species of the genus *Ceruchus* MacLeay (Coleoptera: Lucanidae) from Kaliningrad amber deposits, Russia

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Abstract: A new fossil species of stag beetle in amber from Russia, *Ceruchus zuobangi* **sp. nov.**, is described. Photographs and diagnostic characteristics are provided.

Keywords: amber, Lucanidae, Palearctic Realm, stag beetle, taxonomy

俄罗斯加里宁格琥珀产区一凯锹属化石新种（鞘翅目：锹甲亚科）

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摘要：本文描述了一个来自俄罗斯的锹甲虫珀新种，祚邦凯锹 *Ceruchus zuobangi* **sp. nov.**。提供了照片和描述了其特征。

关键词：琥珀，锹甲亚科，古北界，锹甲，分类

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Introduction

The stag beetle genus *Ceruchus* MacLeay, 1819 occurs primarily in the Palearctic and Nearctic realms. The genus currently comprises 18 species (Wickham 1911; Huang *et al*. 2011; Huang & Chen 2017). Only one fossil species has been recorded: *Ceruchus fuchsii* Wickham, 1911. It was discovered in the Florissant Fossil Beds of the United States, dating back to 34 million years ago and belonging to the Late Eocene. All others are extant species.

I obtained an amber inclusion by chance, and it can be assigned to the genus *Ceruchus* based on its cylindrical body shape and distinctive mandible morphology. Furthermore, this species can be distinguished from known species by its morphology.

Material and methods

The material is from the Kaliningrad amber deposit in Russia, geologically dated to the Late Eocene, approximately 34–38 million years ago. The amber was cut into a spherical shape and encased in artificial resin to provide protection and reduce refraction. Images were captured under a microscope and processed using Helicon Focus software.

CXY Private Collection of Xi Yuan, Changsha, China.

Taxonomy

Genus *Ceruchus* MacLeay, 1819 凯锹属

Ceruchus zuobangi sp. nov. 祚邦凯锹

https://zoobank.org/FD084E8F-BAA5-4625-89CC-D2F7B6B8CDF5

Figs 1–2

Type material. Holotype: ♂, Kaliningrad amber deposits, Russia. Housed in CXY.

Etymology. This new species is named in honor of Mr. Zuo-Bang Yuan from Hunan, China, in appreciation of his financial support.

Description. Body 7.5 mm long. Length of particular parts (mm): head (0.9), mandible (1.0), pronotum (1.6), elytra (4.1); width (mm): head (2.1), pronotum (2.4), elytra (2.7).

Head (Fig. 2A, B) about 2.3 times as broad as long, broadest behind eyes; surface densely punctate, punctures gradually increasing in size from middle to lateral sides. Vertex nearly flat, not depressed. Clypeus with a small process anteriorly directed. Mandible about 1.1 times as long as head, setose on inner side, distinctly incurved at middle; apical tooth triangular, without well-developed inner tooth, base convex. Postocular margin straight. Postocular width approximately 1.5 times as wide as eye. Antennomere 2 slightly larger than median antennomeres (Fig. 2D).

Pronotum (Fig. 1C) 1.5 times as wide as long, widest at middle, and 1.14 times as wide as head. Lateral margin straight, posterior margin also straight. Surface uniformly covered with small punctures throughout.

Scutellar (Fig. 2C) shield linguiform. Surface with about ten small punctures.

Elytra (Fig. 2E) 1.5 times as long as wide, widest around posterior 1/3, width about 1.13 times that of pronotum. Elytra without distinct striae, densely punctate, with punctures arranged in longitudinal rows.

Legs. Tibia (Fig. 2F–H) short and robust. Protibia with 5 teeth along outer margin, teeth acute at apex, arranged uniformly, becoming larger toward apex. Meso- and metatibia, in addition to apical spurs and spines, each with one large tooth and 1–2 small denticles along outer margin.

Male genitalia not examined.

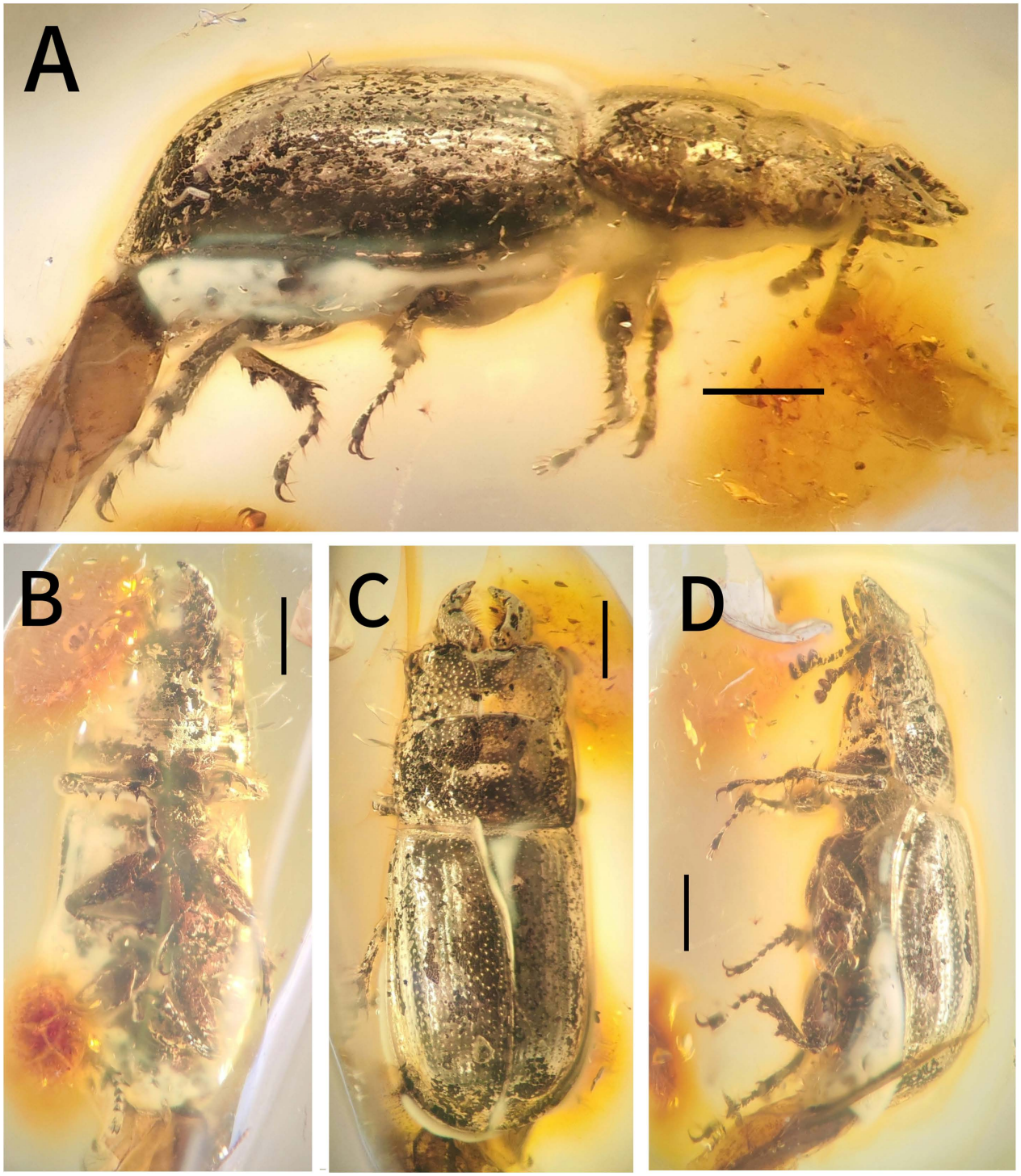

FIGURE 1. *Ceruchus zuobangi* **sp. nov.**: **A** right lateral view **B** ventral view **C** dorsal view **D** left lateral view. Scale bars = 1.0 mm.

Differential diagnosis. This new species can be distinguished from extant congeners by the following combination of characters: vertex without median depression; postocular width approximately 1.5 times eye width; elytra without distinct striae; male body length less than 9 mm.

Remarks. The only previously known fossil species of the genus, *Ceruchus fuchsii*, is represented by a female holotype with a body length of 16.4 mm, and its elytra bear approximately eight distinct striae. Males of the genus

are generally equal to or larger than females in body size, and the elytral striae are essentially identical between the sexes. *Ceruchus fuchsii* and *Ceruchus zuobangi* **sp. nov.** can be clearly distinguished by differences in body size, elytral striae, and geographic distribution.

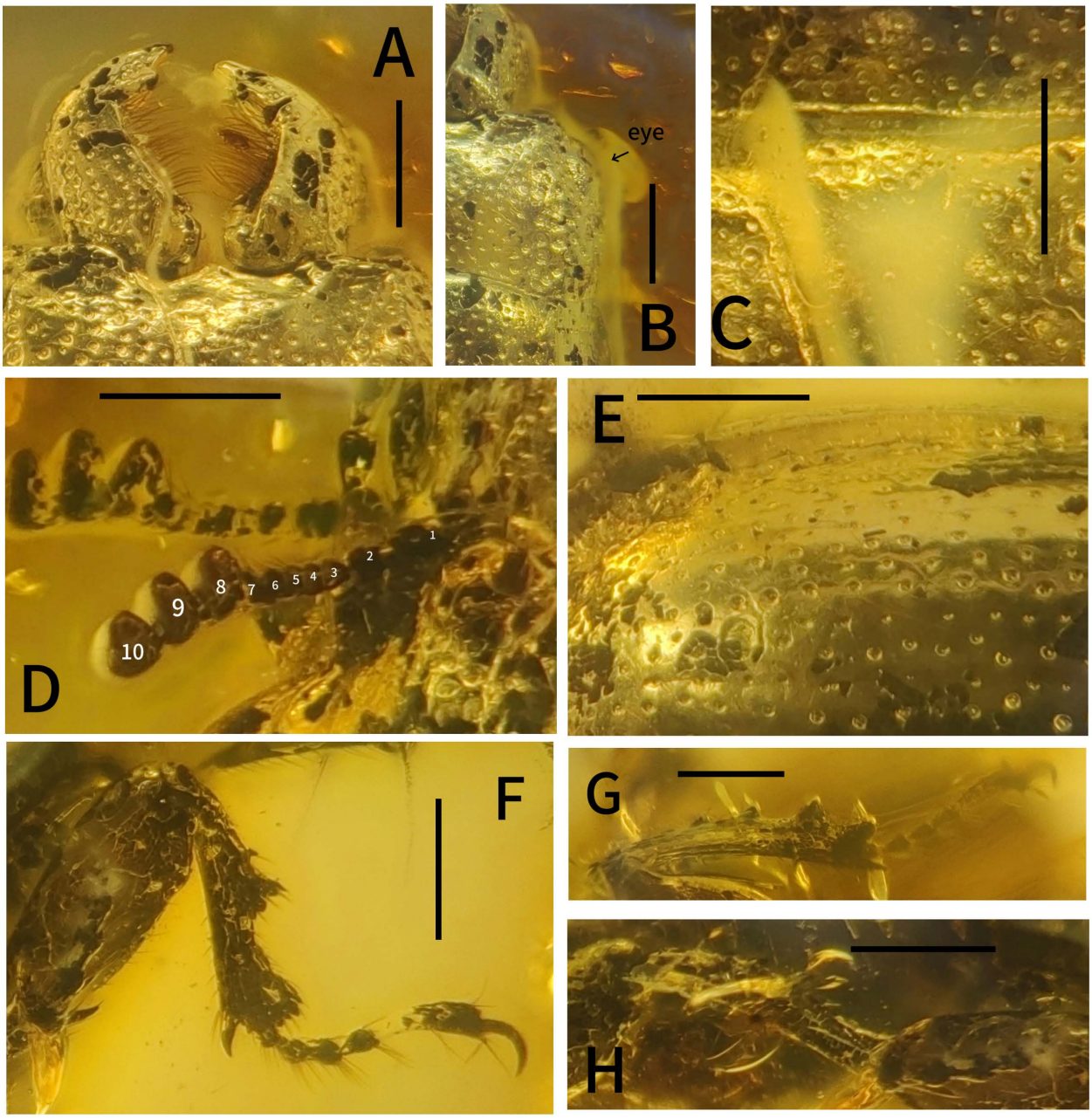

FIGURE 2. *Ceruchus zuobangi* **sp. nov.**: **A** mandibles **B** eye **C** scutellum **D** antennae **E** elytra **F** left midleg **G** left foreleg **H** left hindleg. Scale bars = 0.5 mm.

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Additional information

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Photo Gallery

Hesperus perakensis Cameron, 1950
Sabah, Borneo Island
photograph by Tian-Jiao WANG [王天骄]